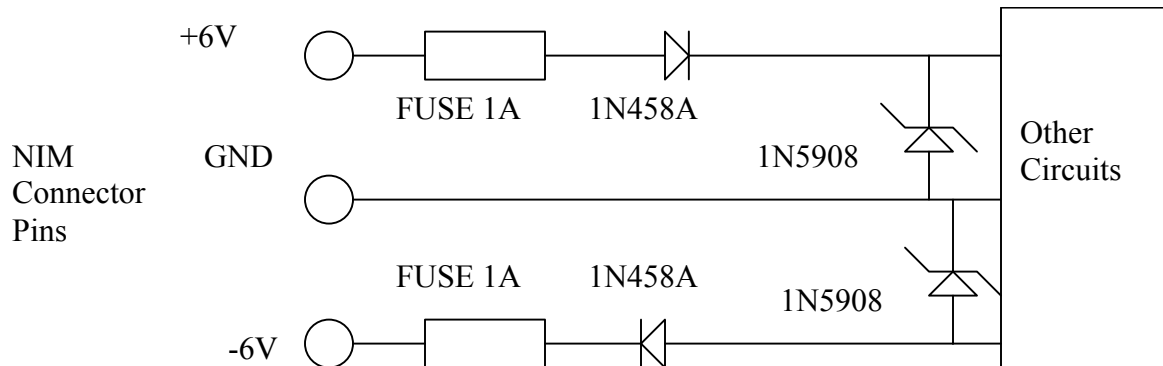


### Note for safety review

Date: 5/23/2002  
Project: BTeV Chamber Electronics  
Subject: LVDS to ECL Converter module  
Name: Zonghan Shi  
Email Address: shi@fnal.gov  
Ext: 2140

#### General information:

1. The converter is a standard single width NIM module. It receives 16 channels of LVDS input signals sent to a 34-pin connector and converts them into ECL signals and sent out through a 34-pin connector.
2. Two power supply voltages +6V and -6V are taken from the NIM back panel connector.
3. Each ECL output net has a 390Ohms resistor pull down to -5.2V.



#### Over-current protection:

Two fuses (2A 125V Littelfuse Inc.) are used between the +6V and -6V input voltages from the NIM connector and the rest of the printed circuit board in the module. (See diagram above)

#### Over-voltage protection:

Two 6.2V over-voltage suppressor, 1N5908 are used after the fuses in the module. (See diagram above)

#### Wire size for power distribution:

The wire size used between NIM connector and the printed circuit board is 18 AWG.

#### Measured power usage:

The normal operating currents are 0.15A for +6V and 0.44A for -6V.

**Misconnections of the signal cables:**

There may be 5 types of misconnections involving this module: (1) ECL output to LVDS input, (2) ECL input to LVDS input, (3) LVDS input to LVDS input, (4) LVDS output to ECL output, (5) ECL output to ECL output. Misconnections types (2) and (3) have no harm. Type (5) is permitted in ECL standard. In the worst cases (1) and (4), current flows through each cable conductor (normally 28 AWG) is determined by the ECL pull down scheme. The maximum current in each cable conductor is less than 13mA in the worst misconnection cases.

**Front panel LEDs:**

Two red LEDs are used on the front panel to indicate the present of +6V and -6V power voltages.

**Keying system:**

The module can be inserted in any slot in the NIM crate and no damage can be resulted in. So no keying system is designed for this module.